

7.3.1. Coin Mode

This mode has an "accept/reject" or "discrimination" pattern that is best for ignoring a variety of junk targets, while still being able to detect most coins. One of the features of the Quattro MP is its ability to vary the tone on the target signal. In COIN mode the Audio signal/tone will vary according to the level of conductivity of the detected metal. Eg: Highly conductive metals like silver, gold and brass will produce a high pitch signal. Lower conductive items like foil, nickel, and low carat jewelry will produce a lower tone. (see Section 10 : Detector Sounds).

The reject settings for this mode are (-10 to +2) and (+6 to +8).

Use: This mode is best used in high trash areas such as modern parks, sporting grounds, playgrounds, busy beaches etc. and, will ignore a large percentage of foil and ferrous trash.

Note: Some modern coins are produced with nickel or steel cores and should be considered in certain regional applications. These coins may not be detected in COIN Mode.

7.3.2. Coin/Jewelry

This mode has a slightly reduced level of "rejection" or "discrimination" to enable you to locate non-ferrous (iron) coins, as well as gold jewelry. It allows some coins with a high ferrous content or low carat jewelry, that may have been discriminated in COIN mode to be detected, however aluminium foil will also be detected. The audio signal response will vary depending on conductivity in the same fashion as the COIN mode.

The pre-set reject settings for this mode are (-10 to -1)

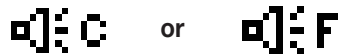
Tip: Low tone = Low Conductivity content. High tone = High Conductivity content.

Use: The most common use for this mode is for those who are prepared to dig some foil and pull tabs to find all gold jewelry, ideal for beaches, old parks, abandoned house sites, camps etc.

7.3.3. Relic

The RELIC mode has an even lower level of "rejection" or "discrimination," as many rare and valuable relics can have very low conductivity and/or ferrous content. The Audio response in RELIC mode is different to the COIN, and COIN/JEWELRY modes in that it uses the ferrous (iron) content to determine the pitch of signal.

Note: Depending on which mode you select , a beep and icon will appear briefly which will indicate which mode the audio response is in. This is shown as:



In this RELIC mode, a target with a high ferrous content will produce a low tone and objects with a low ferrous content give a high tone.

The pre-set "reject" or "discrimination" settings for this mode are (-10 to -3). Because of this, **beach hunters** who specifically target gold jewelry may also prefer to use the RELIC mode.

The other difference with the RELIC mode is that the pictorial on-screen **icons are not shown**, as operators using this mode are more likely to interpret signals using the ID numbers and audio response only.

7.3.4. All Metal

ALL METAL mode is similar to the RELIC mode, the difference being that no discrimination is used.

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The ALL METAL mode's audio response also uses the object's ferrous characteristics for interpreting the signal tones like in the RELIC Mode.

Use: This is the best mode to use when a maximum target recovery rate is important, like in some competition hunts or when the user is looking for any and all metals.

7.4. Menu/Select +/-

The MENU/SELECT button (4) and arrow buttons (5) are the main controls you will use to navigate the menu and make changes.

Refer to Chapter 8 – Menu Setting

7.5. Accept/Reject

The ACCEPT/REJECT button (6) allows the operator to adjust the discrimination pattern to accept or reject any of 51 segments shown on the detect screen. This allows you to build a custom discrimination pattern that will ignore signals from unwanted targets and still accept signals from desirable targets.

7.6. Pinpoint

The PINPOINT button (7) is used to accurately locate the true position of the target prior to digging.



To pinpoint a target:

When the PINPOINT button is pressed, the target icons on the detect screen will be replaced by a locator bar graph as shown left: In PINPOINT mode, your detector will produce a clear 'beep' as the search coil passes directly over the target. The locator bar graph in

the Main screen will also fill out on the screen as the coil passes directly over the target.

There is not a lot of difference between the signal produced by shallow targets and those by deeper targets, so it is important to note the approximate depth from the depth indicator, before switching to PINPOINT. To accurately determine where to dig, mark a line in the ground where the center of your coil is when the beep occurs and the **majority of the bars are shaded**. Pass over the target a few times for accuracy.

Repeat this process at 90 degrees to create a cross-hair point on the ground.

The PINPOINT button must be pressed again to return to normal detect mode.

Points to remember:

- When in PINPOINT the Quattro MP does not discriminate between metal targets.
- Always press the PINPOINT button again when returning to search (do not search in PINPOINT mode)
- After pinpointing, and laying the detector down to dig the target, it is common for the detector to give an intermittent signal. Switching out of pinpoint when digging, then returning to PINPOINT again if the location of the target needs to be confirmed can overcome this.
- Do not press the PINPOINT button when directly over a target as this may cause a constant signal.

7.7. Noise Cancel

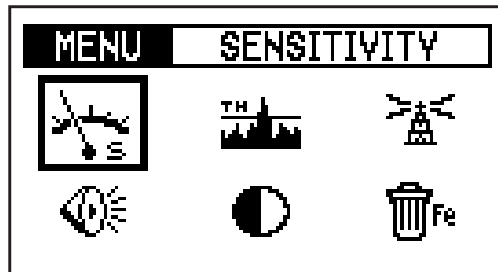
NOISE CANCEL is the automatic function on the Quattro MP where the most stable search channel is found for the environment you are searching in. It is important to always engage the NOISE CANCEL prior to making changes to other menu selections.

8. Menu settings

The Quattro MP has the following **user** adjustable settings:

- Discrimination pattern
- Sensitivity
- Threshold
- Noise Cancel
- Target Volume
- Contrast
- Trash Density

All the settings above, (except the discrimination pattern), are adjusted via the Menu screen by following these steps:



- Press the MENU/SELECT button (4) to access the Menu screen shown above
- To adjust one of these settings, use the – or + arrow buttons (5) until the desired selection is highlighted. To avoid pressing the -/+ buttons numerous times, you can press and hold in the button and the selection will move smoothly, then release the button when you've reached your desired selection.
- Press the MENU/SELECT button again, to activate the highlighted selection. This will take you to a screen specific to that setting.
- Use the – or + arrow buttons to adjust the setting to the desired value.
- Press the MENU/SELECT button again to apply the setting, and return to the Menu screen to select another control.

Note: When you have made the changes to the menu functions [this may be just one or all six], just press the Mode button to return to the normal Detect screen and start detecting.



8.1. Sensitivity

The SENSITIVITY control is adjustable to set the best level of sensitivity for the environment being detected. The factory pre-set setting is in Auto, and this will self adjust to suit the conditions you are detecting in. You can also lock the sensitivity to suit a particular area by manually selecting a level between 0 and 20.

A manual sensitivity setting can be used in areas with blanket/constant soil mineralization, such as beaches, modern parks etc. However, Auto sensitivity is the preferred setting when detecting areas with changing soil conditions.

SENSITIVITY
15



8.2. Volume

The VOLUME feature is used to adjust the maximum volume of **the target signal** - not the overall volume of the Quattro MP. The range of volume available is from 0 to 20 and the preset level is 20.

This is used to prevent signals from large and shallow items producing very loud signals that are uncomfortable to one's ears. This should be adjusted to suit your individual hearing.

Note: The volume control sets the target volume only and does not effect the detectors sensitivity or power.

TARGET VOLUME
15



8.3. Threshold

The THRESHOLD feature controls the audible level of sound during detecting, or the "background hum". Most operators find that detecting with a very low but still audible threshold is preferred. A lower level may mask responses to smaller targets and the higher levels will make targets difficult to hear. The level preset by Minelab is 12, as it will emit responses to most large and small targets.

The range of Threshold is from 0 to 40.

The use of headphones will normally allow the threshold to be reduced.

THRESHOLD
20



8. menu settings

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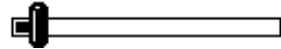
8.4. Noise Cancel

In many of the locations you will be detecting in, there will be electrical interference which may cause your detector to become unstable. NOISE CANCEL is an automatic function on the Quattro MP where the most stable search channel is found for the environment you are searching in. It is important that you **select Noise Cancel BEFORE making adjustments to Sensitivity or Threshold**, as an instable environment will lead you to make unnecessary changes to these other functions. For this reason a shortcut NOISE CANCEL button (8) is provided on the main control panel.

You may find that the source of electrical interference may change during the course of your detecting session, so if your detector becomes unstable, press the NOISE CANCEL button again to cancel the interference.

Important: While performing a NOISE CANCEL, it is important to keep the detector coil motionless, and also ensure that no metallic objects are moved in close proximity to the search coil.

NOISE CANCEL
10%



8.5. Contrast

The contrast of the main screen can be adjusted using the CONTRAST Control to suit the user, as well as weather conditions.

CONTRAST
10



8.6. Trash Density

The TRASH DENSITY function will enable the user to optimize the detector for areas that have a LOW or HIGH ferrous trash content.

TRASH DENSITY



Use : LOW is the factory preset setting, and will provide the best performance in most areas. LOW provides the operator with the most precise target ID and allows the operator to create a discrimination pattern for a specific target that is quite narrow. It also has a slightly better depth capability in most soil conditions.

Use: HIGH is a specialty setting, suitable for areas with unusually high amounts of ferrous (Iron) trash, and also areas with highly variable ground mineralization. HIGH setting detects targets at a faster rate but with less precision, so in areas with a lot of trash, particularly if close together, HIGH setting is more likely to detect the presence of a "good" target in amongst a number of rejected targets. In HIGH setting, a greater number of target ID numbers need to be used to reject a specific target.



8. menu settings

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Similarly, HIGH is the preferred setting when detecting in heavily mineralized or variable ground.

HIGH setting can be used with a slightly faster sweep speed, so is suitable for use during competition hunts, or in areas where speed of ground coverage is important.

The performance characteristics of the two modes is summarized below:

Setting		ACCEPT/REJECT Functionality	Detection in average soils, & low trash sites	Detection in mineralized grounds, sites with ferrous junk
Trash Density	LOW	Very good	Very good	Average – may miss detection of non-ferrous objects
	HIGH	Average	Very good	Good

In HIGH setting the Quattro MP signal response works faster to pick out good targets in between all the trash but requires a wider discrimination pattern. This is easily demonstrated by attempting to use the ACCEPT/REJECT function in HIGH setting:

- Sweep a junk object that you would like to eliminate over the coil, and attempt to reject it by pressing ACCEPT/REJECT.
- Now pass the target over the coil again and repeat the process
- The Quattro MP will continue to find different materials in the target and it will show different ID's.
- It may require you to reject a number of ID numbers before a specific target is fully rejected.

For this reason, accurate discrimination is best when operating in LOW setting.

TIP: When detecting do not wear steel-toed boots or shoes with metal eyelets. These can send conflicting signals to your detector.

9. Discrimination

9.1. Discrimination (Accept/Reject) Scale

When a target is detected, an ID number appears on the left hand side of the screen, an icon appears on the right hand side of the screen, and a bar and cursor appearing in the Discrimination scale along the bottom of the screen in the Graphic Identification Bar.



The location of the target cursor corresponds to the discrimination rating or ID number of the object.

When an object is detected, the target cursor will momentarily flash.

On the Graphic Identification Bar the shaded area represents rejected target IDs and the clear area represents accepted target IDs.

9.1.1. Interpreting target responses

The Target ID Range have 51 numbers from (-10 to +40).


Ferrous (Iron) objects will have IDs in (-10 to -1) range.

Non-ferrous (non-iron) objects will have IDs in the (0 to +40) range.

Objects with higher conductivity will have greater IDs.

9.1.2. To modify the Discrimination Pattern

The discrimination pattern of a factory pre-set mode can be modified and saved as a personal setting, so that your own preferred discrimination pattern is ready for use any time you wish.

The  icon will be displayed on the screen to indicate that a mode has been temporarily modified.

There are three methods of modifying the discrimination pattern.

Method 1 – To reject a specific target/object:

- Wave the coil over the object. The detector will move the cursor to indicate the object's position on the scale, and the target's ID number will appear on the screen.
- Press the ACCEPT/REJECT button to reject the object's ID.
- Wave the coil over the target and check that it is being rejected. If it still produces a response, reject its new ID by pressing ACCEPT/REJECT a second time.


Method 2 - To reject a specific Target ID number:

- In the Detect screen use + and – buttons to select the ID you want to modify. The cursor and the Target ID numbers will indicate the selected ID.
- Press the ACCEPT/REJECT button to either accept or reject that ID. You will notice the band on the discrimination scale will become shaded if rejected or clear if accepted. The ACCEPT/REJECT button will toggle between accepting and rejecting targets.


Method 3 - To accept or reject a large range of target IDs:

- Start from either the first or last number of the ID band you wish to select.
- Push and hold both the Accept/Reject button, and the – or + button until the selected area is achieved. You will note that the cursor box on the Graphic Identification bar will be shaded when the ACCEPT/REJECT button is in REJECT mode and clear when in the ACCEPT mode.

Tip: Due to the processing methods used by the Quattro MP, the ACCEPT/REJECT button is far more effective when in the LOW TRASH DENSITY setting. The HIGH setting enhances the detectors ability to pick out good targets in high concentrations of Iron, and as a result the ACCEPT/REJECT function is not as accurate. (See section 8.6 for more on TRASH DENSITY)


Once the discrimination pattern has been modified, the  icon will appear next to the detect button to show that the detect mode has been modified. These changes to discrimination pattern will be lost if you select a different detect mode. The modified discrimination pattern can be saved as a user detect mode by following the steps below.


To create and save a user mode:

The  icon will appear next to the mode button when the changes are saved as a personal setting.

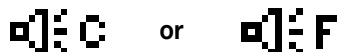
- Select the factory pre-set detect mode you want to alter.
- Modify the discrimination pattern as per 9.1.2.
- Press and hold (approx. 3 seconds), the appropriate mode button until the SAVED message is displayed on the screen as shown below:



- When the mode is saved, the  icon will appear next to the mode button that was pressed. You can save your personal pre-set mode in any of the four pre-set locations.

Once a user mode is saved, simply press the mode button to revert to the factory pre-set mode , or press it again to return to your personal saved mode. This allows you to easily toggle between the two, to compare responses on various targets.

Note: Any time a different mode button is selected, a small sound (loudspeaker) icon is displayed next to the battery level icon. It will stay on for ten seconds and will show if the mode is using Conductive or Ferrous sounds. This is shown as:



10. detector sounds

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10. Detector Sounds

Start –up music. When you first turn the detector on, there is a short tune during the detectors 'start-up' sequence. Wait until this tune has finished before pressing other buttons or starting to detect.

Threshold. This is the slight background 'hum' which is there during detecting.

Target Signal. This is the signal given by the detector when a metal target is located and not discriminated out.

Conductivity Tones. When searching in the COIN or COIN/JEWELRY mode, the target signal will vary depending on the conductivity of the metal the target is made from. If the target is made from a highly conductive metal, the tone of the signal will be higher pitch, if the target is low conductive, the tone of the signal will be of a low tone.

Ferrous Tones. If searching in RELIC or ALL METAL modes the target signal will vary depending on the ferrous content of the target. If the target has a high ferrous content like pure iron, the tone of the signal will be a low pitch, if the target has a low ferrous content, the tone of the signal will be of a higher tone.

Null. If you pass across a target which is discriminated out, you will notice that the threshold will momentarily go quiet and return again once you have passed the target.

Pinpoint. Passing across a target in pinpoint, the target signal is quite short and 'clipped' in its response.

Overload. If passing across a large or shallow target, the detector will give a continuous buzzing sound indicating the target signal is too strong to interpret.

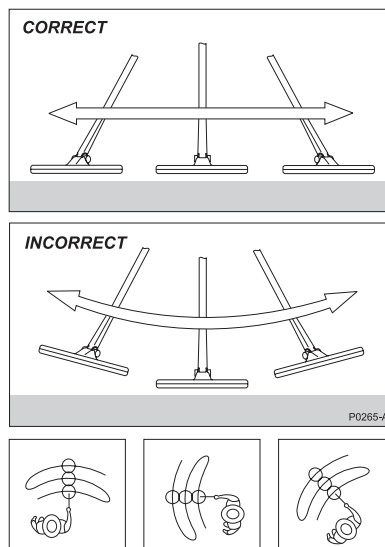
Low Battery Signal. When the battery power is exhausted, there will be a short tune and shortly after a longer tune will announce the detector is switching off.

11. Using Your Quattro MP

Sweeping the Coil

The Minelab Quattro MP will perform at its best when the coil is kept close to the ground. This will increase detection depth and response to small objects. Becoming practised at sweeping the coil is very important, as a variation in coil height at the end of each swing can cause confusing sounds and reduce detection depth. Each sweep of the coil should slightly overlap the last one. This will ensure thorough ground coverage.

When an object is detected, the Minelab Quattro MP emits an audio response and visually displays a target classification on the LCD.





12. troubleshooting

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Fault	Solution
Detector does not start at all	<ul style="list-style-type: none"> – Check the state of the batteries and battery connections. – Ensure battery pack lid is completely closed. – If using alkaline batteries, check whether they have been loaded in the right polarity and correct if necessary.
Detector starts, but it switches off by itself	<ul style="list-style-type: none"> – Check the state of the batteries. If necessary, try starting with batteries known to be in good condition. – Detector may be too hot. Allow detector to cool down in a shaded area. – Try starting the detector with search coil disconnected. If the detector starts normally, check the state of the coil cable. If it is damaged, replace the coil. Otherwise return detector for repairs.
No sound	<ul style="list-style-type: none"> – Unplug the headphones. If there is sound from the speaker but not in the headphones, check the headphones and their connection. – Check the Audio menu's Max Limit (a setting of 0 is silent or Audio OFF). – If there is no sound from the speaker or the headphones but the detector appears to work normally otherwise, return the detector for repairs.
Erratic Noises	<ul style="list-style-type: none"> – Press the NOISE CANCEL shortcut button. – Reduce the SENSITIVITY. – Change the orientation of the coil to the vertical plane and rotate to see if there is a position where the noise is reduced. If this is the case, it means that there is a source of interference nearby which must be avoided. – Check battery charge and battery connections. – Ensure coil connector is tightened firmly. – Check headphones and their connection. – Check for sand or grit between coil cover and coil.
No Target Response	<ul style="list-style-type: none"> – Ensure the detector is turned on. – Check headphones and their connection. – Check coil connection. – Check discrimination level. No signal will be given if the target is within black area of screen.

13. glossary of terms

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Camlock	Lever that releases or locks detector's assembly components.
Conductivity	A measure of the ability of a target to allow eddy currents induced by the transmitter.
Control box	Encloses the electronic components necessary to generate and interpret signals and provide user access to functions via the control panel.
Control buttons	Buttons on the control panel that offer quick access to the functions and settings most likely to be used during detector operation e.g. PINPOINT and ACCEPT/REJECT.
Control panel	Houses the display screen and provides press-button access to all of the detector's operating functions.
Discrimination	The ability of a metal detector to identify the user's desired target and eliminate signals from undesirable material.
Ferrous	Composed of or containing iron. Ferrous objects (e.g. nails) are usually not desired by the detectorist.
Full Band Spectrum (FBS)	Simultaneous transmission ranging from 1.5kHz to 100 kHz. This range in frequencies means that the signal received from the detector coil is analyzed from a wide range of responses.
Ground compensation	The ability of the detector to compensate for the effects of ground mineralization.
Handle assembly	Part of the detector made up of the control box, handle and armrest.
Mineralized ground	Ground containing certain minerals, which can cause false signals to be given.
Nickel Metal Hydride (NiMH)	NiMH batteries have a longer life span and are not affected by memory to the same degree as some other rechargeable batteries.
Non-ferrous	Not containing iron. Non-ferrous objects or non-magnetic metals (such as silver or copper coins, gold jewelry, etc).
Pinpoint	Function allowing an object to be precisely located. PINPOINT overrides the automatic motion detection and discrimination settings of the Quattro MP.
Response	The signal or audible indication of a target.
Search coil	The search coil is the circular plate swept across the ground surface during detecting. It transmits signals into the ground and receives the response.
Sensitivity	The detector's level of response to a target in the presence of ground noise and/or electromagnetic disturbance.
Shaft assembly	An adjustable assembly made up of the upper and lower shaft connected by camlocks. The shaft assembly connects the search coil to the handle assembly.
Threshold (hum)	The audible level of sound emitted when no target is detected is the THRESHOLD. This threshold hum is the background sound made as the Quattro MP operates. THRESHOLD can be set anywhere between no sound (silent) and loud.



14. pre-set settings

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14. Pre-set Settings

Menu Settings

Sensitivity	Preset - Auto
Target Volume	Preset 20
Threshold	Preset 12
Noise Cancel	Automatic
Contrast	Preset 10
Trash Density	Preset Low

Discrimination Settings

Coin Mode	(-10 to +2) and (+6 to +8)
Coin Jewelry Mode	(-10 to -1)
Relic Mode	(-10 to -3)
All Metal Mode	(open)

notes

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notes

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